Twist in LC Films

Y. Hu , J. Park, and L. Martinez-Miranda (U. of Maryland)

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We have used glancing angle X-ray scattering to study the effect of sample thickness on twist in LC films. We studied films 10 microns, 15 micron and 20 microns thick. We found that films 10 micron thick show a TGB structure. These same films retain smectic-like up to the point where the nematic to isotropic transition occurs. Films 15 micron thick show persistence of the smectic signal up to the nematic isotropic transition, but not a defined TGB. Films that are 20 micron thick do not exhibit a strong signal at all. This may be due to the effect of weight of the sample, which results in it sliding down.

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